LISTING OF CLAIMS

1. (Previously Presented) A method using a computer for simulating radio frequency signal processing circuitry, comprising:

forming a matrix representation of a radio frequency signal in a wireless communication system, wherein the radio frequency signal is substantially zero between a plurality of frequency bands, and wherein the matrix is formed of a plurality of pieces, each piece representing a frequency band;

performing processing on the matrix representation to simulate operation of the radio frequency processing circuitry on the radio frequency signal, the processing forming a processed matrix representation of the radio frequency signal; and

converting the processed matrix representation of the signal to a representation of the radio frequency signal as operated on by the radio frequency processing circuitry.

2. (Previously Presented) The method of claim 1 wherein information in the matrix representation of the radio frequency signal is limited to information of the signal in frequency bands of interest.

3. (Original) The method of claim 1 wherein the processing simulates non-linear operations.

4. (Canceled)

5. (Original) The method of claim 1 wherein the processing includes linear time invariant processing and non-linear time invariant processing.

6. (Original) The method of claim 1 wherein the processing is frequency domain processing.

7. (Original) The method of claim 1 wherein the processing is time domain processing.

8. (Original) The method of claim 1 wherein the processing simulates RF receiver front-end processing.

9. (Previously Presented) The method of claim 2 wherein the signal is centered about a carrier frequency, and the frequency bands of interest include the carrier frequency and harmonics of the carrier frequency.

10. (Original) The method of claim 9 wherein the signal is bandwidth limited to a bandwidth B, and the frequency bands of interest are limited to the bandwidth B.

11. (Previously Presented) A method using a computer for modeling circuitry, comprising:

converting a representation of a first radio frequency signal to a matrix representation, wherein the first radio frequency signal is substantially zero between a plurality of frequency bands, and wherein the matrix is formed of a plurality of pieces, each piece representing a frequency band;

processing the matrix representation to form a further matrix representation to simulate operation of radio frequency circuitry on the first radio frequency signal; and

converting the further matrix representation to a representation of a second radio frequency signal resulting from operation of the circuitry on the first radio frequency signal.

12. (Currently Amended) The method of modeling circuitry of claim 11 wherein the frequency bands of the first radio frequency signal are centered about a carrier frequency and harmonics and sub-harmonics of the carrier frequency; and

wherein the pieces of the matrix represent ~~the compressed equivalent signals are formed by restricting information in the compressed equivalent signals to~~ signal components about the carrier frequency and harmonics and sub-harmonics of the carrier frequency.

13. (Previously Presented) The method of modeling circuitry of claim 12 wherein the first radio frequency signal is bandwidth limited and the matrix representation is bandwidth

limited.

14. (Previously Presented) A system for performing RF signal processing modeling, the system comprising a computer operative:

to form a matrix representation of a radio frequency signal, wherein the radio frequency signal is substantially zero between a plurality of frequency bands, and wherein the matrix is formed of a plurality of pieces, each piece representing a frequency band;

to process the matrix representation to simulate RF signal processing; and

to convert the matrix representation to a representation of an RF signal resulting from RF signal processing.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) A method according to claim 1, wherein the matrix representation is a frequency domain matrix representation, and wherein each piece of the matrix representation comprises a vector of a plurality of frequency components

18. (Previously Presented) A method according to claim 17, wherein all pieces of the matrix representation have the same number of frequency components.

19. (Previously Presented) A method according to claim 17, wherein the processing includes a convolution operation, and wherein performing the convolution operation includes:

converting the frequency domain matrix representation to a time domain matrix representation; and

performing a multiplication operation on the time domain matrix representation.

20. (Previously Presented) A method according to claim 19, wherein the simulated radio frequency processing circuitry includes a non-linear block, wherein the operation of the

non-linear block is simulated by evaluating a polynomial having a degree of at least two, and wherein the time domain matrix representation is the variable of the polynomial.

21. (Previously Presented) A method according to claim 17, wherein the processing includes performing, on the frequency domain matrix representation, at least one of the operations of component-wise addition and component-wise multiplication.

22. (Previously Presented) A method according to claim 17, wherein the processing includes performing a convolution on the frequency domain matrix representation, wherein the convolution is performed piecewise.

23. (Previously Presented) A method according to claim 11, wherein the matrix representation is a frequency domain matrix representation, wherein processing includes performing convolution on the frequency domain matrix representation, and wherein the convolution includes:

converting the frequency domain matrix representation to a time domain matrix representation; and

performing multiplication on the time domain matrix representation.